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Chapter 5

Galenic Heritage in Locke's Medical Philosophy: From Locke's Medical Remains to His Reflection on Education

Claire Crignon

Abstract Locke's reading of ancient medicine is usually studied through his collaboration with Thomas Sydenham, who came to be called the "English Hippocrates". The emphasis is therefore on the specific way Locke inherited the Hippocratic method of observation. This paper aims to stress the fact that the Galenical tradition is still present in Locke's thought. The Galenical question of the method in medicine (*methodus medendi*) is at the core of Locke's reflection on the art of medicine and on the nature of diseases. Besides, Locke uses Galenical terms to investigate the use of respiration in 1666. Recognising that this tradition is still alive in the second part of the seventeenth century is important to understand how Locke framed his own thoughts about the diversity of hypotheses in the field of medicine. More widely, this paper tries to resolve the apparent contradiction between, on the one hand, Locke's affinity with experimental philosophy (which means rejection of ancient knowledge), and on the other, his proximity with the ancient tradition of regimen, found in his mature works on education.

1. Introduction

John Locke (1632-1704) was not a physician. His name is associated with the publication of philosophical works, such as the *Two Treatises of Government* (1689) and the *Essay Concerning Human Understanding* (1689). K. Dewhurst (1966), P. Romanell (1984) during the last decades of 20th, J. C. Walmsley (1998/2008) and P. A. Anstey (2011) since the beginning of 21st have highlighted the importance of an early period of Locke's philosophical career. He was not a medical practitioner but he attended Thomas Willis's Lectures on natural philosophy in Oxford (Dewhurst, 1980), and later on engaged in a close collaboration with Thomas Sydenham, the "English Hippocrates" (Anstey, 2011). At the time when he was training in natural philosophy and writing about medical subjects (the 1660s at Oxford), Hippocrates' and Galen's doctrines were essential parts of university education. Defending Galen was to place oneself in the ranks of the conservatives in medicine, whereas acknowledging Hippocrates' heritage was to side with modernity in medicine and advocate a change in the method of treatment. Defenders of Galen were generally members of the old and conservative College of Physicians, reluctant to introduce any change in the method of treatment, considering anatomical discoveries as a threat to the established practice and the profession. On the opposite side, those who were committed to medical reform, in the fields of both medical knowledge and practice, forcefully criticized the Galenic heritage, pleading for a new *methodus medendi*, that is to say, a new method of treatment.

It is also well known that starting in 1667 John Locke, who studied medicine and natural philosophy at the beginning of his career at Oxford, became close to Thomas Sydenham who later became known as the 'English Hippocrates'. Reflecting on the state of medical art and practices, Locke considers that natural history of diseases and observation of signs of diseases should constitute the foundations for a new method in medicine. This brief (albeit rough) presentation of the medical landscape at the time that Locke was completing his medical

curriculum should lead us to conclude that Galen's writings and thoughts are absent from Locke's work. 'Locke was not a Galenic physician', writes Peter Anstey in his 'further reflections on Locke's Medical Remains' (Anstey, 2015, 216) and there is no reason to contest this statement.

However, in this chapter, we would like to show that Galenical thought is not absent from Locke's reflection and thinking about medicine, especially if we consider the period prior to his meeting and collaboration with Thomas Sydenham, when he was writing about diseases, respiration, anatomy and the current state of medical art. We intend to show that this heritage is crucial from two perspectives. First, it is crucial to understand what is at stake in Locke's position about the classical question of *methodus medendi*. This is the first entry point into a consideration of Locke's relationship to Galen's thought. We will have to consider whether Galen's reflections about medical sects and debates between various methods in medicine played a role in Locke's own reflections about medical hypotheses. Locke's researches on respiration and diseases, in the beginning of the 1660s, may offer us a good illustration of the importance of Galen's thought for the question of how to cope with diversity in the field of natural philosophy.

Secondly, we should not limit our inquiry solely to the medical part of Locke's work, that is to say his manuscripts on disease and the practice of medicine. Medicine remains present in Locke's mature work, and especially in his writings on education. How should we consider this aspect of Locke's judgements about medicine? Is there a contradiction between, on the one hand, Locke's affinity with experimental philosophy and his defence of chemical medicine in his earlier period, and, on the other, his closeness with the old medical tradition, especially the dietetic tradition of regimen, which provides *Some Thoughts Concerning Education* with its composition and structure? If medicine played a crucial role in Locke's philosophical project, how should we evaluate the presence of regimen and diet in Locke's approach to ethics and education?

2. Locke and Galenism: From Contested Legacy to the Practical Probing of One Hypothesis Among Others

2.1. The 'Galenical Way of Thinking'

Let us start with a preliminary remark. Unlike Robert Boyle, who quotes Galen and left behind texts and treatises where he critically examines the orthodox medical practice (Hunter 2000, 190–192), John Locke does not refer directly to Galen's texts in his medical remains. Besides, Galen's works are not in Locke's library, in contrast to the writings of Hippocrates; he held several editions of his *Aphorismi* and one edition of his *Opera Omnia* (see Harrison and Laslett 1965, 154–155). This is a clear indication that Locke is less interested in Galenical thought in itself, than he is in discussing doctrines of physicians who have decided to rely on ancient medicine as an argument from authority. It is also worth pointing out that, after an initial period of transmission of Galenic texts by Arab physicians, a second wave of transmission occurred via the translation of Galen's comments on the constitution of the art of medicine and the *methodus medendi* in various European languages. At the end of the 16th century in England, for instance, Thomas Gale published a treatise entitled: *Certaine Workes of Galens, Called Methodus Medendi, with a Briefe Declaration of the Worthie Art of Medicine, the Office of a Chirurgion, and an Epitome of the Third Book of Galen, of Naturall Faculties: All Translated into English by Thomas Gale* (Gale 1586). The question addressed at the beginning of Locke's dissertation on 'the purpose of respiration', dealing with the

problem of the ‘true method of healing’ or ‘*methodus medendi*’, belongs to this tradition of thinking about the art of medicine: ‘Concerning this matter, the battle was fierce between the chymists and those others who love to be called Galenists’ (Locke 1666a, 71v).¹

The expression ‘those others who love to be called Galenists’ is a clear indication that the intended backdrop of the discussion is the polemical dispute between Galenists and Chemists, which is the starting point of several treatises on the art of physic at this time. Let us just recall that George Thomson’s *Galeno Pale: Or, A chymical Trial of the Galenists*, published in London in 1665, begins with ‘A short description of Galen, from whom *they are denominated Galenists*’, and is followed by ‘An account of that true chymical Philosopher and learned Physician Helmont’, i.e. J.-B. Van Helmont, follower of Paracelsus who already launched a fierce attack on Galenism during the Renaissance (Thomson 1665, Table of Contents, Chap. 1 and Chap. 2; emphasis added). Reception and discussion of Galen’s thought takes place in the highly polemical context of a dispute between two institutions. On the one side, we find the College of Physicians, whose teaching is still grounded on Galenical treatises on physiology, pathology and therapeutics², and on the other, the new chemical medicine, which draws on the Paracelsian Renaissance legacy, to defend new anatomical discoveries and the emerging experimental philosophy.

In this context, ancient medical doctrines appear as integral parts of the scholastic tradition and are criticized as speculative discourses removed from experience, as ‘idols’ to use Baconian terminology, that hinder any progress in the field of medicine.³ What pamphleteers criticize is not ancient physicians themselves, but rather their Renaissance and modern followers who are responsible for the transformation of their thoughts into a dogmatic approach that hinders any real progress in the field of the medical art. What accusation can be brought against the Galenists? Probably, as Christopher Merrett suggests in his *Letter Concerning the Present State of Physick* to be ‘too rigorously confin’d to the rules and methods of the Ancients’ who built their practice on speculative knowledge (health as the result of the balance of humors, therapy grounded on the principle that ‘opposite are cured by opposite’ etc.), whereas modern ‘chymists’ have now the opportunity to use experiments as a way to put theoretical doctrines to the test (Merrett 1665, 59). Locke writes this dissertation on the purpose of respiration for the use of his medical *curriculum*. For this reason, the text follows the structural form of a scholastic disputation between the two camps, the adepts of ‘Galenic remedies’ on the one side, the adepts of ‘chymical remedies’ on the other. Nevertheless, the tone of his writing clearly indicates that he is interested in the way ancient medical hypotheses (as for instance ‘opposite are cured by opposite’) have been transformed into axioms, or precepts relying on a large consensus, whereas during Antiquity they were the objects of intense discussions and disagreements during Antiquity that are now totally unknown (Locke 1666a, 71v). ‘The Galenical way’ of thinking in medicine is prejudicial because it uses Galen dogmatically and as an argument from authority, hindering any attempt to discuss other doctrines and hypotheses about physiological functions, diseases, or methods of healing.

¹ ‘Hac de re ardens fuit bellum inter chymicos aliosque qui Galenici dici amant’. In this paper, I am using P. Anstey and L. Principe’s new transcriptions of Locke’s medical remains, to be published in the Oxford edition of Locke’s works. See Crignon 2016 for a French translation of these texts.

² Of course, not only Galen was used in medical teaching, but also Hippocrates. See Cook 1990, 73.

³ Bacon stigmatized Galen in his *Temporis Partus Masculus* where he is characterizing him as someone who ‘deserted the path of experience and took to spinning idle theories of causation’. For the Latin edition of the text, see Farrington, 1964, ch. II, 64. Bacon’s judgment on medicine as a ‘science that hath been more professed than labored, and yet more labored than advanced’, in his *Advancement of Learning*, II, Bacon, 2000, 99 is quoted in M. Nedham, 1665, 212.

2.2. Conflict Between Medical Sects and the Rise of Enthusiasm: Political and Religious Interpretation of the Ancient Epistemic Dispute

Just before Locke wrote his dissertation on the purpose of respiration, in 1665, Marchamont Nedham (1620–1678), a pamphleteer and editor who produced newspapers and polemical writings for both the Parliamentarians and the Royalists, published in London a text entitled *Medela Medicinae, A Plea for the Free Profession, and a Renovation of the Art of Physick*. Michael Hunter has characterized this treatise as ‘the chief anti-Galenical work’ of that period (Hunter 2000, 161). It is an anonymous publication and the author explains this choice by alleging that the virulence of the attacks carried out by Galenic physicians oblige him to hide his identity. What Nedham is rejecting is the association of Galenism with ‘the Scholastic Method of teaching’ and a tendency to ‘attempt an Autarchie in Physick’ (Nedham 1665, ‘The Epistle Dedicatory’). Against this ‘Galenical way’, he advocates the necessity of free thinking and allowing new approaches to diseases and treatments (that is to say, the new experimental chemical medicine). Galenical physicians are presented as ‘tyrants’, whereas chemical physicians appear as victims of persecution. In other words, Nedham strongly politicizes the epistemic controversy about the right method of healing, while also suggesting a religious interpretation of the conflict. The comparison of ‘chymists’ with ‘enthusiasts’ is indeed used on both sides of the controversy, either to defend them or, conversely, to accuse them of being fanatics.⁴ William Johnson, for instance, in *Arguto-Mastix*, a treatise that tries to reconcile both camps, rejects strict followers of Galenical tradition, as well as passionate adepts of chemical medicine, who refuse to accept that followers of van Helmont might see and understand more ‘on Galen’s shoulders’ than by their own faculties: ‘These fellows do by Chymistry, just as our Fanaticks do in Religion, cry it up zealously, but with a manifest design to pull it down, both being equally Ignorant, and both Enemies to the truth’ (Johnson 1665, 18).

3. Reframing the Classical Question of *Methodus Medendi*: Eclecticism and Indifference

3.1. Locke’s Mediated Reading of Galen

How is this issue addressed in Locke’s medical manuscripts? As we already noticed, Locke does not have a first-hand knowledge of Galen. He refers to his thinking through intermediaries, and in the first place, through Daniel Sennert (1572–1637) a German physician who was trying to ‘reconcile the new iatrochemical school of Paracelsus with Galenic Humoralism’ (Romanell 1994), as is clearly shown in the title of one of his treatises published at the beginning of 17th century: *De chymicorum cum Aristotelicis et Galenicis consensu ac dissensu liber I* (Sennert 1619).⁵ Locke owned a copy of Sennert’s *Opera* (1656) in his library and he very often mentions Sennert in his notebooks.

In his book on *Medicine as a New Key to Locke*, P. Romanell uses Sennert’s presence in Locke’s medical writings to present Locke as a ‘medical eclectic’ (Romanell 1994, 52). But what does this mean, exactly? The eclectic is often seen as someone who passively endorses contrary opinions or doctrines, favouring syncretism instead of logical coherence, because he wants to avoid conflict. Nevertheless, we tend to forget that it was an epistemic position promoted as a genuine method during the seventeenth century. As Walter Charleton explains in his *Physiologia Epicuro-Gassendo-Charltoniana* (1674), eclecticism is a way to question

⁴ On the medical dimension of the criticism of enthusiasm during the 17th century, see Heyd 1998.

⁵ On Sennert, see Michael 1997 and Hirai 2005.

authority conferred on ancient knowledge. It is not a passive acceptance of contrary doctrines, but a practical endeavour to test some hypotheses, to subject them to an experimental trial:

[Philosophers] pay a reverend esteem, but no implicate Adherence to Antiquity, nor erect any Fabrick of Natural Science upon Foundations of their own laying; but, Reading all with the same constant indifference and aequanimity, select out of each of the other sects, whatever of Method, Principles, positions, Maxims, Examples, etc. seems in their impartial judgements, most consentaneous to Verity, and on the contrary refute, and as occasion requires, elenchically refute what will not endure the tests of either right Reason, or faithful experiment (Charleton 1654, 4).

3.2. A Chymical Trial of the Galenists

This is precisely the way chosen by George Thomson in his *Galeno-Pale: Or a Chymical Trial of the Galenists* (Thomson 1665). Chemical medicine is used as a practical way to put Galenical tradition to the test, which does not mean that everything in this tradition is to be thrown away, but that some aspects of the method of healing may be preserved if they pass experimental tests. We will return to the practical implications of such a statement. For now, let us just stress what is at stake, from an epistemic perspective, in this methodological choice. The question addressed by Walter Charleton is about diversity of hypotheses in the field of natural philosophy and about the possible conflicts between various medical sects it may occasion. This question is inherited from Galen who devoted a whole treatise – *On the Sect for Beginners* – to the fight between medical sects, that is to say, between rationalists, empiricists, and methodists. Whereas rationalists (or dogmatists) affirm that a causal understanding of the inner workings of the body is necessary for the treatment of diseases, empiricists refuse to admit that internal causes are discoverable,⁶ or claim that even if we knew them, it would not be helpful for therapy, and Methodists avoid the difficulty by explaining all diseases with the notion of ‘apparent communities’, which involves perceiving what symptoms share in common.⁷

At the time of Locke’s writing about disease, respiration and the art of medicine, this conflict between medical sects took the form of a confrontation between three main hypotheses, which are presented by Thomas Willis in 1659 in the first chapter of his *Diatribae duae Medico-philosophicae*: the Galenical hypothesis (which explains natural bodies with the help of humours and elements and ‘salves the appearances of things’); the Epicurean hypothesis (which ‘undertakes Mechanically the unfolding of things’), and that of the ‘Chymists’ which better ‘quadrates with the Phaenomena of Nature, when we descend to particulars’ (Willis 1681, 2).

This text will be used by defenders of chemical medicine in a polemical manner to repudiate the Galenical way in medicine and the humoral hypothesis⁸ whereas the preference given to the chemical hypotheses appears, in Willis’ presentation, as the result of a systematic comparison between various hypotheses that are successively examined and evaluated with

⁶ ‘The empiricists claim that the art comes about in the following way. One has observed many affections in people. Of these, some occur spontaneously, both in the sick and health, e.g. nosebleeding, or sweat, or diarrhea, or something else of the kind which brings harm or advantage, though one cannot see what it is that produced the effect’, *ibid.*, 4. ‘The method, on the other hand, which proceeds by means of reason admonishes us to study the nature of the body which one tries to heal the forces of all the causes which the body encounters daily’, Galen, in Walzer & Frede 1985, 5.

⁷ ‘... they define their whole doctrine accordingly as a knowledge of apparent communities’. *Ibid.*, 11. We only know the empiric and the methodist position through Galen and Celsus’s writings. See Celsus 1938. About this debate between ancient sects, see Pellegrin, in Galien 1998, 32–55.

⁸ ‘Away with the frigid Notion of four Elements (...). There is a very short, but sufficient Character given of this opinion by Dr. Willis in the first chapter *De Fermentatione*’ (Nedham 1665, 243).

impartiality. Willis is not satisfied with a rejection of Galenism, rather he is trying to understand the reasons for the success of this hypothesis that survived the discovery of the circulation of the blood and was still defended and embraced by many physicians in choosing a method of healing. Locke knew this text and followed Willis' teaching when he was studying medicine at Oxford.

3.3. *Against Medical Intolerance: The Virtues of Indifference and Examination*

We believe that Locke adopts the same approach to the problem of diversity of hypotheses in the field in natural philosophy. First of all (and even if the question is rather disputed amongst Locke's scholars),⁹ Locke does not spare chemical physicians who explain natural phenomena with new principles (salt, sulphur and mercury) from his criticisms of speculative doctrine. A critical examination of their language is equally necessary, as he explains later in a letter written in 1693:

I fear the Galenists four humors, or the chymists salt, sulphur, and mercury, or the late prevailing invention of acid and alkali, or whatever hereafter shall be substituted to these with new applause, will upon examination be found to be but so many learned empty sounds, with no precise determinate signification. (Locke 1979 [20 January 1693], 629–630)

Later on, in the posthumous *Of the Conduct of the Understanding*, §34, Locke proposes to examine the battle between medical sects with attention, but also with 'indifference' instead of 'espousing the principles of the dogmatists, methodists or chemists' and 'engaging in all the disputes concerning either of those systems' (Locke 1993, 106). Refusing to adopt the polemical tone used by defenders of the new experimental and chemical medicine (to which he is nevertheless close), Locke argues that the Galenical hypothesis about diseases deserves to be taken into consideration and discussed as much as others, even though he does not endorse it. Moreover, we know that Locke read and annotated a polemical treatise against Paracelsus and chemical medicine (*Erastus contra Paracelsum*) written by Thomas Lieber (Erastus), a Swiss physician who is also known for defending the absolute right of the magistrate to intervene into religious affairs (Romanell 1994, 52). Paracelsianism is characterised in the treatise as a heresy that should not be tolerated.

Locke's observation of medical disputes and diversity of hypotheses in the field of natural philosophy during the 1660s certainly played an important role in his reflection about religious intolerance and the urgent need to reframe the question of dealing with diversity in a state of uncertainty (Crignon 2019, 245–268). The difficulty of achieving any certainty in the knowledge of diseases and their causes may also come with a silver lining: the benefit of acknowledging diversity and calling for mutual tolerance in a situation of ignorance. What Locke is very vigorously rejecting is the tendency to impose hypotheses as established and certain dogmas, whether these hypotheses come from Galenists or from Chemists. This practical attitude towards diversity in the field of medicine and towards the specific question of the choice of a right method (*methodus medendi*) is particularly obvious in the first sentence of *Morbus*, written in 1666: 'I suppose another & more rationally theory of diseases might be established upon other principles, then those either of the Galenists or Paracelsians' (Locke 1666b, 118v).

⁹ See for example the discussion between P. Anstey and C. Walmsley about Locke's adherence to chemical doctrine: Anstey 2010; Anstey 2011; Anstey 2015, 215–242; Walmsley 2002, 378–397; and Walmsley 1998 (revised in 2008).

The question is not to decide which party is right against the other, it is rather to find a practical way to deal with diversity of medical hypotheses, a way that will put an end to disputes, and allow for an improvement in treatments.

4. A Case Study: Respiration

In his *De Arte Medica* (1669), Locke underscores ‘the great improvement some parts of medicine have received within this few years’. Medicine would ‘yet [be] capable of great additions’, if it accepted a change of method: ‘... a way some thing different from what hitherto seems to have been generally followed by most of those who have beene soe kinde as to propagate the knowledge of physic & leave the rules of practice to posterity’ (Locke 1669, 50r).

The question of a change in the method of treatment is clearly formulated here. Locke is criticizing physicians who have transmitted Hippocratic and Galenic precepts to posterity. Strict followers of ancient medicine have turned away from observation and experience in favour of speculative principles: they ‘confined and narrowed mens thoughts, amused their understanding with fine but uselesse speculations, and diverted their enquiries from the true and advantageous knowledge of things’ (51r).

Humoral theory is a good illustration of this kind of ‘useless speculation’ that hinders physicians from continuing the work of collecting observational data recommended by Hippocrates. Even anatomy is characterised in *Anatomia* as a speculative approach to bodies. This association might be surprising for a modern reader. But we know that this speculative approach to anatomy was associated at the time with Galenic teaching and criticized by Chemical physicians (as for instance M. Nedham or G. Thomson) as a manifestation of curiosity ‘to little purpose’, that is to say with a bookish knowledge (Anstey 2011, 37; Thomson 1665, 25–26). Locke is opposing a practical anatomy, that might be acknowledged as a helpful guide for the surgical practice, and a speculative one, guilty of trying to discover remote causes of diseases, an endeavour that is useless in helping physicians to find ways to actually cure diseases (Locke 1668, 31r).

Let us now consider the case of respiration and of diseases linked to respiration. This is typically the kind of physiological function that requires fresh investigation after the important anatomical discovery of blood circulation by Harvey in 1628. Whereas the movement and action of the lungs were described in relation to their use for the heart, Harvey expresses – in the Proem to *De motu cordis* – the need to think of their structure and movements separately. We need therefore to re-examine the Galenic idea of respiration as designed to cool the blood of animals. At the end of Chap. 6 of the treatise, Harvey acknowledges the insufficiency of this explanation. The inquiry concerning the functions of the lungs and the causes of respiration will stay ‘speculative’ as long as all the observations gathered on the subject have not been compiled in a single treatise on the subject. Because he does not want to deviate from his topic (the circulation of the blood), Harvey postpones this treatise on respiration that would require a history of air and a decomposition of its nature (Harvey 1995, 48). This project is later carried out by Robert Boyle with his *New Experiments Touching the Spring and Weight of the Air* (1660) and his *General History of the Air* (2000 [1692]).

Understanding the link between changes in the colour of the blood and process of respiration, inquiring into the nature of the exchange between blood and air, and more widely questioning the purpose of respiration and the use of the lungs, are parts of Harvey’s legacy to natural philosophers and physicians in the middle of the seventeenth century.

These questions are at the core of Locke's medical dissertation, *Respirationis usus*, written in Latin in 1666, possibly to satisfy the requirements of a Bachelor of Medicine (Walmsley 2007; Walmsley and Meyer 2009). The title of the manuscript is a direct reference to Galen's *De usu respirationis* (Galen 1984). The second disputed question concerns the use of respiration: 'whether the primary purpose of respiration is the cooling of the heart?' (73r). This question, raised in the specific context of the dispute between Galenical and Chemical physicians, re-stages the ancient debate between medical sects. Following rationalist or dogmatic physicians, we need to start from the elucidation of physiological functions to be able to explain pathology and to offer cures.¹⁰ In his *Method of Medicine*, Galen explains that diseases imply a damaged function. The aim of the art of medicine is to restore health, that is to say, to 'restore the functions of the parts to normal wherever they should happen to have been damaged' (Galen 2011, 67, and Rocca, 2017). But this is not achievable without knowing the causes of the perturbation. It is precisely this rational ambition that Locke questions in his medical remains. Searching for remote causes reflects the understanding's tendency not to be satisfied with the observation of natural phenomena. Locke argues that the physician might observe the effects of the process of respiration (or of generation), but the comprehension of the *modus operandi*, the precise relationship between effects and causes, is out of his reach. This is the reason why Locke refers in this manuscript to the observation of mineshafts and of the 'frequent listless faintings that occur there' (72v).

Locke derived some of these observations from Henry Power's *Experimental Philosophy* (1664). He might also have himself spent time observing, at Boyle's request, the living conditions of workers in the metal mines of Mendip. He noticed frequent asphyxiation resulting from a lack of ventilation and the presence of stale air overloaded with carbon dioxide and contaminated by mercury emissions. Based on this observation of the effects of contaminated air, the question raised about breathing changes significantly; the question is no longer to think about respiration as a necessary condition for life (as it was the case in Aristotle's *Parva naturalia* or in Galen's treatise on respiration), but to explain which physical and chemical properties of air are necessary for the exercise of this vital function. Boyle, Lower and Willis' experimental investigations concerning the presence of nitre in the air, certainly played a major role in Locke's decision to oppose the Galenical thesis (Walmsley 2007 and 2009; Frank 1980): 'Whether the primary purpose of respiration is the cooling of the heart? I deny it' (Locke 1666a, 73r).

It is the presence of this nitrous substance in the air that might explain the process of fermentation and volatilisation of the blood that respiration renders possible, as Locke explains very early in a note on respiration in one of his *Commonplace Books* written between 1659 and 1666: 'Another use of respiration seems to be to mixe some particles of aier with ye bloud and soe to volatize it, since it appears yt vegitable substances neither ferment nor yild any volatile salt without a communication with ye open aier'.¹¹

These hypotheses about particles of air mixing with the blood responsible for the process of blood volatilisation is reaffirmed in *Respirationis usus*: 'He who has been even lightly initiated by nature into the mysteries, and moderately trained in chymical distillations would know unavoidably how necessary the assistance of air is both for fermenting and for volatilizing things' (Locke 1666a, 72r). When we breathe, air is introduced into our bodies. Hot particles of nitre contained in the air produce an evaporation or volatilisation of the blood.

¹⁰ On this question, see Debru, 1996, 241.

¹¹ Locke, *Respiratio*, British Library Add MS 3554, 48r, 49r, quoted in Walmsley 2007, 459–460. Willis's theory of fevers and fermentation is attacked by the Galenist physician E. O'Meara, and defended by R. Lower in his *Vindication*, as is clearly indicated in the title of Chap. 2: 'It is shown against O'Meara that fever is correctly described by Willis' (Lower 1983 [1665], 207–208).

This fact contradicts the Galenic theory about respiration. The function of respiration is not to cool the blood but to warm it up: ‘We conclude therefore that the air is the efficient and the tinder for the heat of the heart rather than a refrigerant. This is moreover made manifest by daily experience’ (Locke 1666a, 72r). Locke here uses the chemical notion of ‘distillation’ to offer a kind of empirical decomposition or analysis of natural bodies (like air or blood) instead of a speculative effort to deduce a function from the anatomical elucidation of structures. One of the results of this way of inquiring into respiration based on empirical observation about the nature of air is to offer a characterisation of life that highlights its dynamic nature:

In this way it is clear that our life consists in the perpetual generation and efflux of spirits, that is, in the volatilization of the mass of blood. The volatilization is carried out by fermentation and by a sort of kindling or fermentation (or whatever else it might be called) except with the help of air. (Locke 1666a, 72r)

Therefore, it is not surprising to see Locke confirm, two years later, in his *Anatomia* (1668), the necessity of lungs and respiration for life, while asserting that anatomy of the lungs would be useless for shedding light upon causes of the breathing process. Anatomy won’t help us to get access to the structure of organs. Nevertheless, we may accept a kind of experimental anatomy (‘chemical distillation’), that is to say a decomposition of some part of the body into its minute elements, that will help us to observe and describe effects and symptoms better (in case of respiratory diseases) and to find cures. Observations of the air, inquiring into weather changes, for instance, might be useful for understanding the rise and frequency of epidemic diseases and to offer cures. If we paraphrase Locke’s statement in the *Conduct* (§35) and apply it to the present case, we get the following:

Were it my business to understand [respiration], would not the safer and readier way be to consult nature herself and inform myself in the history of [respiratory] diseases and their cures, than, espousing the principles of the [Galenists, Corpuscularists, or Chemists] engage in all the disputes concerning either of those systems...?

This indifference towards various hypotheses and systems, and the firm resolution to stick to a historical and experimental approach to physiological functions corresponds precisely to the position expressed in *Anatomia*:

Let us consider the lungs a part of that constant necessity that we cannot live a minute without its exercise & yet there being noe sensible a separation of anything in this viscus, we are still at a perfect loss in its use, (not to say any thing that though anatomy had taught us its use yet it would not doe us much service towards the cure of its diseases) & whether respiration serve to coole the bloud, or give vent to its vapours, or to adde a ferment to it, or to pound & mix its minute particles or whether any thing else, is in dispute amongst the learned from whose controversys about it are like to arise rather more doubts then any clear determination of the point & all anatomy has donne in this case as well as severall others is but to offer new conjectures & fresh matter for endlesse disputation. (Locke 1668, 33r–33v).

Here Locke expresses a position that corresponds to what the ancient empiricists viewed as the only criteria for the *methodus medendi*: the cure of diseases. The question is not to know how effective cures have been discovered, but to be able to offer cures that have been tested, as Galen explains in his *On the Affected Parts* (III, 3) when he summarizes the positions of the empiricists, showing as a physician, a certain proximity to and understanding of their attitude: ‘To tell the truth, when I hear the empirical physicians talk, I consider their concept exceedingly trustworthy and find the inconsistencies which the dogmatists hold against them not at all genuine’ (Galen 1976, 73).

5. Dietetic and Education: Locke's 'Medical Eudaimonism'

5.1. Focusing on the Practical Side of Galenism

If we recall Locke's suggestion in the *Conduct*, neither the Hippocratic, nor the Galenical, Paracelsian, Democritean (corpuscular) doctrines deserve to be considered as containing 'the whole Art of Physick'. In this text, Locke expressly goes against the usual tendency to interpret texts with partiality, misunderstanding 'the true meaning' of what physicians said. What he is suggesting is the need to define a regimen that will apply to the medical language in general and counteract the tendency to approach texts 'with a mind prepossessed by Doctors and Commentators of my Sect'.¹² Some years earlier, in his correspondence with William Molyneux, Locke also applied this reflection to the Galenists' doctrine of humours and to the chemists' principles. Medical hypotheses will remain 'suppositions taken upon gratis' until:

... we can discover how the natural functions of the body are performed, and by what alteration of the humors or defects in the parts they are hinder'd or disorder'd. To which purpose I fear the Galenists four humors, or the chymists sal, sulphur, and mercury, or the late prevailing invention of acid and alkali, or whatever hereafter shall be substituted to these with new applause, will upon examination be found to be but so many learned empty sounds, with no precise determinate signification. (Locke 1979, 629)

Galenism is here pointedly criticized as a speculative hypothesis that claims the status of a dogma, but no more or less than other hypotheses discussed in the field of natural philosophy. Besides we need to distinguish here between 'the Galenical science of medicine' and 'the Galenic practice of medicine'. As Temkin stressed in his essay on *Galenism, Rise and Decline of a Medical Philosophy*, 'Galenic dietetics and therapy had been practised for hundreds of years and supposedly had prevented and cured diseases. There was no reason for thinking that they had stopped doing so' (Temkin 1973, 165).

It was therefore possible to acknowledge the importance of anatomical discoveries for the progress of medicine as a speculative research and at the same time to stress their relative uselessness for the improvement of medicine as a practice and the persistent need for using traditional ways of curing and preventing diseases. If we accept the hypothesis that experience and observation are the true criteria of medical practice, we should accept the idea that remedies that have shown some efficacy, even if they rely upon a now contested theoretical doctrine, may continue to be used and trusted by patients.¹³

The use of this pragmatic criterion in the debate about progress of physic was not uncommon in the middle of the seventeenth century. Robert Sprackling for instance, in his *Medela ignorantiae: Or a Just and Plain Vindication of Hippocrates and Galen from the Groundless Imputations of M.N.* [Marchamont Nedham], published in 1665, asks a simple

¹² 'Or, supposing that Hippocrates, or any other Book, infallibly contains the whole Art of Physick, would not the direct way be to study, read and consider that Book, weigh and compare the parts of it to find the Truth, rather than espouse the Doctrines of any Party; who, tho' they acknowledge his Authority, have already interpreted and wiredrawn all his Text to their own Sense; the Tincture whereof when I have imbib'd, I am more in danger to misunderstand his true meaning, than if I had come to him with a Mind unprepossess'd by Doctors and Commentators of my Sect, whose Reasonings, Interpretation and Language which I have been us'd to, will of course make all chime that way, and make another, and perhaps the genuine Meaning of the Author seem harsh, stain'd and uncouth to me' (Locke 1993, §34, 106–107).

¹³ Nowadays we may notice that the same type of discussion is at the core of the debate about the legitimacy of homeopathic therapies.

question: why should the success of chemical remedies lead to the suppression of Galenical ones? Are the latter not ‘commodious and necessary’ in specific cases, when chemical remedies cannot be used? This is also the reason why Sprackling contests those who partially present Robert Boyle as someone firmly opposed to Galenical remedies, whereas he ‘approveth the ordinary method and Remedies, as rational and unsuspected, although in cases extraordinary he alloweth others, as Physicians nowadays do’.¹⁴ It is well known that Boyle is referring to these practical criteria in the debate about the *methodus medendi* in his *Usefulness of Natural Philosophy* (1663), sarcastically referring to the patient’s preference for being ‘empirically cured’ rather than ‘methodically kill’d’.¹⁵ Finally we might refer to his *Considerations About the Received Galenicall Methodus Medendi*, written during the 1660s, where he stresses the role of medieval Arabic and modern European physicians, such as Fernelius, in the transmission of ancient methods of healing, ‘methods’ which have been applied to ‘particular diseases’ in such a wise and good way, that ‘those that practice Physick against them, or without them are commonly dangerous & unlearned persons, & are at least to be lookts upon as Empricks, whose administrations of Physick are neither Methodicall nor safe’.¹⁶ A physician rejecting Galenical remedies that have proven their effectiveness could properly be accused of being an ‘empiric’, that is to say someone who acts without following any order or method, and for this reason be considered a danger to patients.

5.2. Locke’s Medical Philosophy as a ‘Medical Eudaimonism?’

Recalling the presence of these pragmatic criteria in the debate about the *methodus medendi* is important in order to appreciate the persistence of Galenical medical philosophy in Locke’s mature treatises. The preference given to the practical aim of therapeutic effectiveness against the theoretical aim of deciding which hypothesis is true or explaining the constitution or nature of things, the idea that the best physician is the one who is able to avoid useless investigations and focus on observation, are integral parts of Galen’s portrait and definition of the ‘excellent physician’ in his treatise *On the Constitution of the Art of Medicine*.¹⁷ Medicine is not a detached object for a peculiar enquiry, it is an integral part of a reflection about the ends of understanding. If we may speak about a ‘medical philosophy’ in the case of Galen (or of Locke) it is not just pursued as a peculiar kind of speculative knowledge or science (as it is the case nowadays when we use the word ‘philosophy of medicine’ to refer to a specific field within the general domain of philosophy of science) but also as a form of practical knowledge or an art of living. Medicine is viewed in Locke’s writing as ‘integral to the project of philosophy’, as a practice that renders men able to search for ‘health and for longevity’, which are necessary conditions to be able to realise a ‘good life’. Locke’s treatment of physic is representative of what Justin Smith calls ‘the forgotten tradition of early modern medical eudaimonism’ (in the case of Leibniz).¹⁸

We think that this assumption is crucial if we want to understand why there is no contradiction between Locke’s affinity with experimental philosophy and his defence of chemical medicine during the period of his medical training, and his proximity to the old medical tradition, especially the dietetic tradition of regimen, which informs the composition

¹⁴ Sprackling, 1665, 33–34.

¹⁵ Boyle, 1999, Vol. 3 [118/20], 365. About the ambivalence of Boyle’s position towards Galenism, see Hunter 2000, ch. 8.

¹⁶ Boyle, in Hunter 2000, Appendix 2, ‘Considerations about the received Galenicall *Methodus Medendi*’, 190–192.

¹⁷ Galen 2016 and Boudon-Millot 2019, 124–125.

¹⁸ Smith 2016, 325–327.

and structure of his later writings on education (*Some Thoughts Concerning Education*, 1693).

First of all, we should remember that Locke's treatise on education belongs to a tradition of counselling people on how to manage their lives, considering the various ages, and circumstances of life, whether they be physical, climatic, or social and emotional. As Andrew Wear points out, 'although therapeutics had undergone vast changes since the time of the ancient Greeks, preventive medicine had changed much less'; 'books on regimen, on the regulation of health, advised on how to lead a healthy and long life, and appeared to cover most aspects of life' (Wear 2000, 156–157). As he is also stressing, this tradition of the regimen of health had 'a strong admonitory and moral tone', and was characteristic of 'learned medicine'. As Galen addressed his treatise *De sanitate tuenda* (Galen 2018) to people of leisure rather than to the poor or to the public in general, his thoughts on this subject were more widely disseminated than those of Hippocrates.¹⁹ Here again, this advice about dietetics and hygiene was transmitted by intermediaries, especially the Italian tradition of the Salernitan Regimen of Health, which remained lively throughout the Renaissance and in modern times, periods of real craving for the literary genre of health advice, from *The Castle of Helth* written by Thomas Elyot (1541) until the *Essay of Health and Long Life* published by George Cheyne (1724), through Bacon's essay 'Of regiment of health' (1592, enlarged 1612, 1625). Galenical precepts about diet and regimen, based on the description of complexions, were at the core of Nicholas Culpeper's translation of Galen's *Art of Physick* (Culpeper 1671), first published in 1652, continuously reissued until the end of seventeenth century, and more specifically aimed at the poor classes of society. In these treatises, the 'practical part of Medicine' is clearly given precedence over the 'theoretical' aspect of Galen's thought. They offer very precise and practical dietary rules to readers, following the Galenical tradition of the 'six non naturals' (air, food and drink, sleep and waking, movement and rest, retention and evacuation, emotions and passions of the soul: see Rather 1968) and according to the doctrine of humours and temperaments (sanguine, choleric, melancholic, phlegmatic and the various combination of these complexions).²⁰

At the same time, the genre of practical ethical tracts also became very popular in England. As Steven Shapin has demonstrated, even if these two genres seemed to involve very different goals (teaching how to live a long life in good health, for the former, teaching how to behave like a gentleman for the latter), 'the relationship between the medical and the moral was not merely metaphorical (but) constitutive': 'telling one that what was considered dietetically good for you was also accounted morally good' (Shapin 2003, 22; and Temkin 1991, 45–47). The idea that what is necessary for preserving health is also necessary for attaining virtue is also at the core of Locke's reflections about education in his treatise. The medical injunction to 'sobriety' has at the same time the moral dimension of praising temperance, as shown in this passage about the use of drinks: 'It is convenient for Health and Sobriety to drink no more than Natural thirst requires' (Locke 1989, §18, 95).

This overlap between medical and ethical discourse is characteristic of Galenical thinking and especially of his *De sanitate tuenda* and another treatise dedicated to the influence of physical constitutions, bodily and dietetic habits on the passions of the soul (Galen 1963, Bigotti, 2019). Temkin and Shapin remind us of this major lesson of Galenical thought, that a 'healthy life is a moral obligation', and 'that the philosophic life of virtue depended upon the medical care of the self' (Shapin 2003, 23). Shapin also considers that this literature demonstrates a very early tendency to what we nowadays call the 'medicalization of life'

¹⁹ About the circulation of these texts among the educated class of the society, see Shapin, 2003, 21.

²⁰ Culpeper (1671, 58) describes combinations of Chollick-Melancholly, Melancholly-Sanguine, Flegmatick-Chollick etc.

(Wear 2000, 209). The trend towards diet reflects a tendency towards the medicalization of physical, moral and social life, valuing the virtues of moderation and sobriety against any kind of excess or defect.

But at the same time, authors of manuals of health warn their readers that ‘He that liveth by Physicke, liveth miserably’ (Cogan 1584, Epistle Dedicatory, 2v–3r) and that ‘there is a wisdom in this, beyond the rules of physic: a man’s own observation, what he finds food of, and what he finds hurt of, is the best physic to preserve health’ (Bacon 1857–1874, Vol. 12, 188). Defenders of dietetic medicine very often end by claiming that everyone is his own the best physician, and advise readers to avoid physicians.

We find the same kind of paradox in Locke’s treatise on education. Let us focus on the first and second part of the text, concerning the education of body and mind (Locke 1989 [1693], 83–102). This part of the book is built as a hygienic treatise, detailing rules of regimen relating to air, food and drink, sleep and wakefulness occupations, emotions and passions, imagination. Working on habits is one of the characteristics of the dietetic part of medicine. The aim of hygiene is to prevent the appearance of diseases by working on all the circumstances that may have a direct or indirect influence on health and over which we may exert some control. This principle may be extended from the field of bodily control (medicine) to the mastery of our emotions, affections and passions (moral). The great educational principle is to work on ‘habits’, whether they concern the body or the mind: ‘The great Thing to be minded in Education is, what *Habits* you settle; and therefore in this, as all other Things, do not begin to make any Thing customary, the Practice whereof you would not have continue, and increase’ (Locke 1989 [1693], §18, 95).

Sorana Corneanu stressed the fact that Locke developed this idea of a ‘regimen of the mind’, based on the principle of a regimen of the body, in another text from his mature period, *Of the Conduct of the Understanding*, where he devotes several sections to practice and habits:²¹

As it is in the body, so it is in the mind; practice makes it what it is, and most even of those excellences which are looked on as natural endowments will be found, when examined into more narrowly, to be the product of exercise and to be raised to that pitch only by repeated actions (Locke 1993 [1706], §4, 17).

Nevertheless, the importance given to dietetic in the definition of a regimen for our life should not be seen as a way to make human beings rely on physic or on physicians. Locke makes the point very clear in the fourth section of the first part of the text:

The consideration, I shall here have of Health, shall be, not what a Physician ought to do with a sick or crazy child; but what the Parents, without the help of Physick, should for the preservation and improvement of an healthy, or at least, not sickly constitution in their children... (Locke 1989 [1693], §4, 84).

The aim of the regimen is to help people to define by themselves, observing their own physical and mental state, defects, habits, dispositions, what is appropriate and adapted to their peculiar constitution (Locke 1968, 421). There is a wisdom in following nature, and in this statement Locke of course shows his affinity with the Hippocratic precept of an order inherent in nature:

This is all I have to trouble you with concerning his Management, in the ordinary Course of his Health; and perhaps it will be expected from me, that I should give some Directions of Physick to prevent Disease. For which I have only this one very sacredly to be observed: never to give Children any Physick

²¹ About this tradition of *cultura animi*, see Corneanu, 2011, esp. Ch. 5, 141–168.

for prevention... It is safer to leave them wholly to Nature, than to put them into the hands of one, forward to tamper, or that thinks children are to be cured in ordinary Distempers, by any thing but Diet, or by a Method very little distant from it. (Locke 1989 [1693], §29, 101–102)

Even if we may be tempted to interpret the overlap between moral and medical discourse as a manifest sign of the process of the medicalization of life, this is a way of expressing pronounced mistrust of the therapeutic physic of the time and emphasizing everyone's responsibility to take care of his own body and mind, without relying too quickly to physicians. Locke is not only saying that following rules of diet is a way to seek virtue. He says something more interesting and that brings him closer to the Galenical idea of medicine as a practical art of living: health is necessary to our 'business and happiness':

How necessary Health is to our Business and Happiness; and how requisite a strong Constitution, able to endure Hardships, and Fatigue, is to one that will make any Figure in the World, is too obvious to need any proof (Locke 1989 [1693], §3, 84).

Health is a necessary condition for leading a good life, without uneasiness. Being healthy is necessary to 'make any figure in the world', whether in our private or collective life (ethical and political). This is the reason why striving to preserve our health is a duty. If medicine remains an integral part of the pedagogical and ethical discourse in Locke's philosophy, it is because it is not possible to think about the ends of human life without taking into consideration the fact that 'the time of our whole life' is short, being occupied by long periods of childhood and of old age, and that we live with limited physical and mental faculties. Nevertheless, if we neglect to take care of our bodies and minds, if we forget to refresh and distract them, we are neglecting something that is a 'necessary condition for the ordinary employments of (our) callings' (Locke 1968, 405–406).

6. Conclusion.

As we have seen, Locke's engagement with Galenic ideas is far from simplistic. It implies several intermediaries. Locke probably knew Hippocrates' works better than the Galenical ones. Nevertheless, the Galenical medical tradition was the subject of a vigorous discussion in the middle of the seventeenth century, with a pronounced political and religious dimension. Recent anatomical discoveries reactivated the old medical debate between sects and put the question of the *methodus medendi* at the heart of these discussions. This is a central element for better understanding the genesis of Locke's reflection about method in the search for truth, but also for understanding the construction of his reflection about diversity and how to cope with it in the field of opinions and where certainty is never assured. Looking closely at the reception of Galen's works, and not only those of Hippocrates, is helpful to highlight practical issues in Locke's medical philosophy instead of only stressing epistemological issues. It is also a way to better understand the unity of Locke's medical philosophy. There is no contradiction between Locke's epistemic discussion about the Galenical way of thinking and hypotheses during his medical training and the affinity with the dietetic medical tradition in the mature works about ethics and education. Taking care of our minds is as important as taking care of our bodily health and longevity. There is no need to inject ethics into medicine because preserving health and longevity is required in order to aim at living a good life. Studying this 'forgotten tradition of medical eudaimonism' – and including Locke's work in it – might also help us to avoid anachronistic readings of modern discourse about medicine. We cannot content ourselves with the idea that the overlap between dietetics and morals should be

seen merely as a sign of the medicalization of life. In Locke's case at least, it is a clear sign of his affinity with ancient medical philosophy, and especially with the Galenical idea of medicine as an art of living and a condition for pursuing a good life. As it is the case with Descartes or Leibniz, it indicates the intention of 'seeing medicine as integral part to the project of philosophy' (Smith 2016, 327).

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